

The image is a large, symmetrical, abstract graphic composed of the letters 'S' and 'Y' arranged in a grid-like pattern. The overall shape is a stylized 'Y' or a complex letterform. The top part is a wide horizontal bar made of 'S's, with 'Y's forming a central vertical stem. The sides of the 'Y' are also formed by 'S's and 'Y's, creating a sense of depth and structure. The letters are arranged in a way that they interlock and form a cohesive, geometric design. The color is a solid, dark grey or black on a white background.

PPPPPPPP	DDDDDDDD	AAAAAA	TTTTTTTTTT
PPPPPPPP	DDDDDDDD	AAAAAA	TTTTTTTTTT
PP	DD	AA	TT
PP	DD	AA	TT
PP	DD	AA	TT
PP	DD	AA	TT
PPPPPPPP	DD	AA	TT
PPPPPPPP	DD	AA	TT
PP	DD	AAAAAAAAAA	TT
PP	DD	AAAAAAAAAA	TT
PP	DD	AA	TT
PP	DD	AA	TT
PP	DD	AA	TT
PP	DD	AA	TT
PP	DDDDDDDD	AA	TT
PP	DDDDDDDD	AA	TT

....
....
....
....

LL	IIIIII	SSSSSSSS
LL	IIIIII	SSSSSSSS
LL	II	SS
LL	II	SS
LL	II	SS
LL	II	SS
LL	II	SS
LL	II	SS
LL	II	SS
LL	II	SS
LL	II	SS
LL	II	SS
LL	II	SS
LL	II	SS
LLLLLLLLLL	IIIIII	SSSSSSSS
LLLLLLLLLL	IIIIII	SSSSSSSS

(1)	82	DECLARATIONS
(1)	276	STACKS FOR NULL AND SWAPPER PROCESS
(1)	293	NULL PROCESS HEADER AND PCB
(1)	306	SWAPPER PROCESS HEADER AND PCB
(1)	322	SYSTEM PCB
(1)	331	PCB ADDRESS VECTOR


```
0000 1 .TITLE PDAT PROCESS DATA BASE
0000 2 .IDENT 'V04-000'
0000 3
0000 4 *****
0000 5
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0000 23
0000 24 *
0000 25 *****
0000 26
0000 27 ++
0000 28 FACILITY: EXECUTIVE, PROCESS DATA BASE
0000 29
0000 30 ABSTRACT: PDAT ALLOCATES AND INITIALIZES THE STORAGE FOR THE
0000 31 PROCESS DATA BASE, WHICH CONTAINS THE PCB, PHD AND STACK FOR
0000 32 THE NULL PROCESS AND SWAPPER PROCESS.
0000 33
0000 34 ENVIRONMENT:
0000 35
0000 36
0000 37 AUTHOR: RICHARD I. HUSTVEDT , CREATION DATE: 23-NOV-76
0000 38
0000 39 MODIFIED BY:
0000 40
0000 41 V03-007 LJK0288 Lawrence J. Kenah 9-Aug-1984
0000 42 The AUTHPRI field is located in both the PCB and the PHD.
0000 43
0000 44 V03-006 TMK0001 Todd M. Katz 24-Aug-1983
0000 45 Create the SWAPPER with a UIC of [1,4].
0000 46
0000 47 V03-005 KFH0001 Ken Henderson 20 May 1983
0000 48 Set PCB$V_PHDRES for NULL and SWAPPER
0000 49
0000 50 V03-004 CWH1008 CW Hobbs 14-May-1983
0000 51 Add cell SCH$GW_LOCALNODE to hold the node bits for the
0000 52 local cluster node.
0000 53
0000 54 V03-003 ACG0319 Andrew C. Goldstein, 22-Mar-1983 21:26
0000 55 Add resource attribute to UIC in process rights list
0000 56
0000 57 V03-002 ACG0318 Andrew C. Goldstein, 8-Mar-1983 19:50
```

0000 58 :
0000 59 :
0000 60 :
0000 61 :
0000 62 :
0000 63 :
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0000 71 :
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0000 74 :
0000 75 :
0000 76 :
0000 77 :
0000 78 :
0000 79 :
0000 80 :--

Add initial rights lists to null and swapper PCB's

V03-001 CWH1001 CW Hobbs 15-Feb-1983
Add cells for last PID created and width of PIX field of PID
(SCH\$GL_PIXLAST and SCH\$GL_PIXWIDTH).

V02-005 LJK0097 Lawrence J. Kenah 3-Dec-1981
Initialize all priority fields in PCB and PHD for
both swapper and null process.

V02-004 LJK0067 Lawrence J. Kenah 15-Sep-1981
Move kernel stacks for SWAPPER and NULL so that they are
adjacent to FCP data area. This prevents the exception and
bugcheck code from overwriting valuable data when the system
is manually crashed while the null process is executing.

V02-003 SRB0029 Steve Beckhardt 17-Jul-1981
Added code to initialize lock queue header to GENPCB macro

V02-002 KTA0024 Kerbey T. Altmann 30-Jun-1981
Cause SWAPPER to start up with its PCB addr in R4.


```
0000 82      .SBTTL  DECLARATIONS
0000 83
0000 84  :
0000 85  : INCLUDE FILES:
0000 86  :
0000 87      $ARBDEF      ;ACCESS RIGHTS BLOCK DEFINITIONS
0000 88      $DYNDEF      ;DYNAMIC DATA STRUCTURE TYPE DEFINITIONS
0000 89      $PCBDEF      ;PROCESS CONTROL BLOCK DEFINITIONS
0000 90      $PHDDEF      ;PROCESS HEADER DEFINITIONS
0000 91      $SGNDEF GLOBAL ;DEFINE SYSGEN VALUES
0000 92      $STATEDEF    ;DEFINE STATE NUMBERS
0000 93
0000 94 ;***** Temporary ARB definitions until SDL is fixed to expand
0000 95 ;***** substructure names correctly.
0000 96 :
00000020 0000 97 ARB$R_RIGHTSLIST=32
00000030 0000 98 ARB$R_RIGHTSDESC=48
0000 99 ;***** END OF TEMPORARY DEFINITIONS
0000 100
0000 101 :
0000 102 : EXTERNAL SYMBOLS:
0000 103 :
0000 104 :
0000003F 0000 105 SCH$C_MAXPIX==SGN$C_NPROCS-1 ; MAXIMUM PIX
0000 106
0000 107 :
0000 108 : MACROS:
0000 109 :
0000 110      .LIST  MEB
0000 111      .MACRO PHD      SYM
0000 112      .=PHD...+PHD$'SYM
0000 113      .ENDM  PHD
0000 114
0000 115      .MACRO PCB      SYM
0000 116      .=PCB...+PCB$'SYM
0000 117      .ENDM  PCB
0000 118
0000 119 :
0000 120 :
0000 121 : MACRO TO GENERATE PCB
0000 122 :
0000 123      .MACRO  GENPCB LBL,UIC=0,PHD,PRIORITY,PID,PNAME
0000 124
0000 125      .ALIGN  QUAD
0000 126 PCB...=.
0000 127 LBL==.
0000 128      .BLKB  PCB$C_LENGTH
0000 129 SAV...=. ; SAVE FOR CONTINUATION
0000 130
0000 131      PCB      L_SQFL
0000 132      .LONG    :
0000 133      .LONG    :-4
0000 134
0000 135      PCB      W_SIZE
0000 136      .WORD    PCB$C_LENGTH
0000 137
0000 138      PCB      B_TYPE
```

PROCESS DATA BASE DECLARATIONS

```
16-SEP-1984 00:55:06 VAX/VMS Macro V04-00
5-SEP-1984 03:46:05 [SYS.SRC]PDAT.MAR:1
```

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(1)

```

0000 139      .BYTE  DYN$C_PCB
0000 140
0000 141      PCB    B_ASTEN
0000 142      .BYTE  ^XOF
0000 143
0000 144      PCB    L_ASTQFL
0000 145      .LONG   :
0000 146      .LONG   :-4
0000 147
0000 148      PCB    L_PHYPCB
0000 149      .LONG   PRD-^X80000000+PHD$L_PCB      ; PHYSICAL PCB ADDRESS
0000 150
0000 151      PCB    L_UIC
0000 152 LU = .  .LONG   UIC,1                      ; UIC FOR PROCESS, RESOURCE FLAG
0000 153
0000 154
0000 155      PCB    W_STATE      ; SET STATE TO CURRENT
0000 156      .WORD   SCH$C_CUR      ;
0000 157
0000 158      PCB    L_STS
0000 159      .LONG   <1@PCB$V_RES>+<1@PCB$V_PSWAPM>+<1@PCB$V_PHDR$>
0000 160                      ; RESIDENT, NON-SWAPPABLE, HEADER-RESIDENT
0000 161
0000 162      PCB    B_PRI
0000 163      .BYTE   3T-PRIORITY      ; BASE PRIORITY
0000 164
0000 165      PCB    B_AUTHPRI
0000 166      .BYTE   3T-PRIORITY      ; INITIAL BASE PRIORITY
0000 167
0000 168      PCB    B_PRI
0000 169      .BYTE   3T-PRIORITY      ; CURRENT PRIORITY
0000 170
0000 171      PCB    B_PRI$AV
0000 172      .BYTE   3T-PRIORITY      ; SAVED BASE PRIORITY
0000 173
0000 174      PCB    B_PRI$AV
0000 175      .BYTE   3T-PRIORITY      ; SAVED CURRENT PRIORITY
0000 176
0000 177      PCB    W_DIO$LM
0000 178      .WORD   6                ; ALLOW REASONABLE LIMIT
0000 179
0000 180      PCB    W_DIO$CNT
0000 181      .WORD   6                ; ALLOW DIO
0000 182
0000 183      PCB    L_PID
0000 184      .LONG   PID+<1@16>      ; PROCESS ID
0000 185
0000 186      PCB    L_PHD
0000 187      .LONG   PRD              ; PROCESS HEADER
0000 188
0000 189      PCB    Q_PRIV
0000 190      .LONG   -1,-1           ; PROCESS PRIVILEGES
0000 191 ARB = .
0000 192
0000 193      PCB    L_ARB
0000 194      .LONG   ARB               ; ACCESS RIGHTS BLOCK
0000 195

```



```

0000 196      PCB      Q_PRIV+ARB$R_RIGHTSDESC      ; LOCAL RIGHTS DESCRIPTOR
0000 197      LR = .
0000 198      .LONG    ARB$S_LOCALRIGHTS,LU
0000 199
0000 200      PCB      Q_PRIV+ARB$R_RIGHTSLIST      ; PROCESS RIGHTS LIST
0000 201      .LONG    LR                          ; LOCAL RIGHTS LIST
0000 202      .LONG    EXE$GQ_RIGHTSLIST           ; SYSTEM RIGHTS LIST
0000 203
0000 204      PCB      T_LNAME                      ; PROCESS NAME
0000 205      .NCHAR   NCHAR,<PNAME>              ; COUNT FOR NAME
0000 206      .BYTE    NCHAR
0000 207      .ASCII   \PNAME\
0000 208
0000 209      PCB      L_LOCKQFL                    ; LOCK QUEUE HEADER
0000 210      .LONG    :
0000 211      .LONG    :-4
0000 212
0000 213      .=SAV...                               ; POSITION TO END OF PCB
0000 214
0000 215      .ENDM    GENPCB
0000 216
0000 217      :
0000 218      :      MACRO TO GENERATE PROCESS HEADER
0000 219      :
0000 220      .MACRO   GENPHD LBL,KSP=0,PC=0,POBR=<^X80000000>,POLR=0,R4=0,PRIORITY=0
0000 221
0000 222      .ALIGN    QUAD
0000 223      PHD...=.
0000 224      LBL=.
0000 225      .BLKB    PHD$C_LENGTH
0000 226      SAV...=.
0000 227
0000 228      PHD      L_R4
0000 229      .LONG    R4
0000 230
0000 231      PHD      L_PC
0000 232      .LONG    PC
0000 233
0000 234      PHD      Q_PRIVMSK
0000 235      .LONG    -T,-1
0000 236
0000 237      PHD      L_POLRASTL
0000 238      .LONG    POLR
0000 239
0000 240      PHD      L_POBR
0000 241      .LONG    POBR
0000 242
0000 243      PHD      L_P1BR
0000 244      .LONG    ^X7F802000
0000 245
0000 246      PHD      L_P1LR
0000 247      .LONG    ^X200000
0000 248
0000 249      PHD      L_KSP
0000 250      .LONG    KSP
0000 251      PHD      B_ASTLVL
0000 252      .BYTE    4

```

; LOCAL RIGHTS DESCRIPTOR

; PROCESS RIGHTS LIST

; LOCAL RIGHTS LIST

; SYSTEM RIGHTS LIST

; PROCESS NAME

; COUNT FOR NAME

;

; LOCK QUEUE HEADER

; POSITION TO END OF PCB

;

MACRO TO GENERATE PROCESS HEADER

.MACRO GENPHD LBL,KSP=0,PC=0,POBR=<^X80000000>,POLR=0,R4=0,PRIORITY=0

.ALIGN QUAD

PHD...=.

LBL=.

.BLKB PHD\$C_LENGTH

SAV...=.

; DEFINE LABEL

; GENERATE SPACE

; SAVE FOR CONTINUATION

; INITIAL R4 CONTENTS

; PROGRAM COUNTER

; ALLOW EVERYTHING

; P0 LENGTH REGISTER

; P0 BASE REGISTER

; P1 BASE REGISTER

; P1 LENGTH REGISTER

; KERNEL STACK POINTER

; NO PENDING AST'S


```

0000 253
0000 254 PHD L FREP1VA ; FIRST AVAIL P1 VA
0000 255 .LONG ^X7FFFFFFE00 ; ALL FREE
0000 256
0000 257 PHD W_PHVINDEX ; BALANCE SLOT INDEX
0000 258 .WORD -T ; MAKE PAGE FAULTS ILLEGAL
0000 259
0000 260 PHD B AUTHPRI
0000 261 .BYTE 3T-PRIORITY ; BASE PRIORITY
0000 262
0000 263 .=SAV... ; POSITION TO END OF PHD
0000 264
0000 265 .ENDM GENPHD ;
0000 266
0000 267 ; EQUATED SYMBOLS
0000 268
00000010 0000 269 SWAP_EXT_PRIO = 16
00000010 0000 270 SYS_EXT_PRIO = 16
00000000 0000 271 NULC_EXT_PRIO = 0
0000 272
00010004 0000 273 SWAP_UIC = ^X00010004
0000 274

```

```

0000 276 .SBTTL STACKS FOR NULL AND SWAPPER PROCESS
0000 277 :
0000 278 :
0000 279 :
00000000 280 .PSECT $$$000_STACKS,QUAD
00000080 0000 281
00000080 0080 282 .BLKL 32 ; SHORT STACK FOR NULL PROCESS
00000080 0080 283 NULKSP: ;
000000A0 0080 284
00000300 0080 285 SWP$K_KSTKSZ==160 ; SIZE OF SWAPPER STACK
00000300 0080 286 .BLKL SWP$K_KSTKSZ ; LONGER STACK FOR SWAPPER
0300 287 SWPKSP: ;
0300 288 SWP$A_KSTK:: ; EXTERNAL NAME FOR SWAPPER STACK
0300 289
00000000 290
00000000 291 .PSECT $$$230,QUAD

```

```

0000 293 .SBTTL NULL PROCESS HEADER AND PCB
0000 294 :
0000 295 :
0000 296 :
0000 297 :
0000017C 0000 GENPHD NULPHD,KSP=NULKSP,PC=EXESNULLPROC,PRIORITY=NULL_EXT_PRIO
00000098 017C .BLKB PHD$C_LENGTH ; GENERATE SPACE
00000000 0098 .=PHD...+PHD$C_R4
000000C0 009C .LONG 0
00000000 00C0 .=PHD...+PHD$C_PC
00000000 00C4 .LONG EXESNULLPROC ; PROGRAM COUNTER
FFFFFFFF FFFFFFFF .=PHD...+PHD$Q_PRIVMSK
000000CC 000B .LONG -1,-1 ; ALLOW EVERYTHING
00000000 00CC .=PHD...+PHD$C_POLRASTL
000000C8 00D0 .LONG 0
00000000 00CB .=PHD...+PHD$C_POBR
000000D0 00CC .LONG ^X80000000
000000D0 00CC .=PHD...+PHD$C_P1BR
7F802000 00D0 .LONG ^X7F802000
00200000 00D4 .LONG ^X200000 ; P1 LENGTH REGISTER
00000078 00D8 .=PHD...+PHD$C_KSP
00000080 0078 .LONG NULKSP ; KERNEL STACK POINTER
000000CF 007C .=PHD...+PHD$B_ASTLVL
04 00CF .BYTE 4 ; NO PENDING AST'S
00000030 00D0 .=PHD...+PHD$C_FREPIVA
7FFFFFFE00 0030 .LONG ^X7FFFFFFE00 ; ALL FREE
00000042 0034 .=PHD...+PHD$W_PHVINDEX
FFFF 0042 .WORD -1 ; MAKE PAGE FAULTS ILLEGAL
0000010C 0044 .=PHD...+PHD$B_AUTHPRI
1F 010C .BYTE 31-NULC_EXT_PRIO ; BASE NULL_EXT_PRIO
0000017C 010D .=SAV... ; POSITION TO END OF PHD
017C 298 :
017C 299 :
017C 300 :
017C 301 :
017C 302 :
017C 303 :
000002A0 0180 .ALIGN QUAD
00000180 02A0 .BLKB PCB$C_LENGTH
00000180 0180 .=PCB...+PCB$C_SQFL
00000180 0184 .LONG -4
00000120 0188 .WORD PCB$C_LENGTH
0C 018A .BYTE DYN$C_PCB
0000018D 018B .=PCB...+PCB$B_ASTEN
0F 018D .BYTE ^X0F
00000190 018E .=PCB...+PCB$C_ASTQFL
00000190 0190 .LONG -4
00000190 0194 .LONG -4
80000078 0198 .LONG NULPHD-^X80000000+PHD$C_PCB ; PHYSICAL PCB ADDRESS
0000023C 019C .=PCB...+PCB$C_UIC
00000000 023C .LONG 0,1 ; 0 FOR PROCESS, RESOURCE FLAG
000001AC 0244 .=PCB...+PCB$W_STATE
000E 01AC .WORD SCH$C_CUR ;
000001A4 01AE .=PCB...+PCB$C_STS
00040011 01A4 .LONG <1@PCB$V_RES>+<1@PCB$V_PSWAPM>+<1@PCB$V_PHDRES>
000001AF 01AB .=PCB...+PCB$B_PRI0
1F 01AF .BYTE 31-NULC_EXT_PRIO ; BASE NULL_EXT_PRIO

```



```

000001AB 01B0      .PCB...+PCBSB_AUTHPRI
          1F 01AB    .BYTE 31-NULC_EXT_PRIO      ; INITIAL BASE NULL_EXT_PRI
0000018B 01AC      .PCB...+PCBSB_PRI
          1F 018B    .BYTE 31-NULC_EXT_PRIO      ; CURRENT NULL_EXT_PRI
000001A9 018C      .PCB...+PCBSB_PRI$AV
          1F 01A9    .BYTE 31-NULC_EXT_PRIO      ; SAVED BASE NULL_EXT_PRI
000001A8 01AA      .PCB...+PCBSB_PRI$AV
          1F 01A8    .BYTE 31-NULC_EXT_PRIO      ; SAVED CURRENT NULL_EXT_PRI
000001C0 01A9      .PCB...+PCBSW_DIOLM
          0006 01C0  .WORD 6                      ; ALLOW REASONABLE LIMIT
000001BE 01C2      .PCB...+PCBSW_DIOCNT
          0006 01BE  .WORD 6
000001E0 01C0      .PCB...+PCBSL_PID
00010000 01E0      .LONG NULPIX<1216>          ; PROCESS ID
000001EC 01E4      .PCB...+PCBSL_PHD
00000000 01EC      .LONG NULPHD              ; PROCESS HEADER
00000204 01F0      .PCB...+PCBSQ_PRIV
FFFFFFFF FFFFFFFF  .LONG -1,-1              ; ALL PRIVILEGES
00000204 020C      .LONG ARB
00000234 0210      .PCB...+PCBSQ_PRIV+ARBSR_RIGHTSDESC
0000023C 0234      .LONG ARBS LOCALRIGHTS,LU
00000224 023C      .PCB...+PCBSQ_PRIV+ARBSR_RIGHTSLIST
00000234 0224      .LONG LR                  ; LOCAL RIGHTS LIST
00000000 0228      .LONG EXESGO_RIGHTSLIST    ; SYSTEM RIGHTS LIST
000001F0 022C      .PCB...+PCBST_LNAME
          04 01F0    .BYTE NCHAR
4C 4C 55 4E 01F1    .ASCII \NULL\
00000284 01F5      .PCB...+PCBSL_LOCKQFL
00000284 0284      .LONG
00000284 0288      .LONG -4
000002A0 028C      .PCB...+PCBSL_LOCKQFL
          02A0      .LONG -4
          304 .=SAV...
          ; POSITION TO END OF PCB

```

```

02A0 306 .SBTTL SWAPPER PROCESS HEADER AND PCB
02A0 307
02A0 308
02A0 309
02A0 310
02A0 311
02A0 312
0000041C 02A0 .BLKB PHD$C_LENGTH ; GENERATE SPACE
00000338 041C .=PHD...+PHD$C_R4
00000420 0338 .LONG SCH$GL_SWPPCB
00000360 033C .=PHD...+PHD$C_PC
00000000 0360 .LONG EXE$SWAPINIT ; PROGRAM COUNTER
000002A0 0364 .=PHD...+PHD$C_PRIVMSK
FFFFFFFF FFFFFFFF 02A0 .LONG -1,-1 ; ALLOW EVERYTHING
0000036C 02A8 .=PHD...+PHD$C_POLRASTL
00000368 0370 .LONG 0
00000000 0368 .=PHD...+PHD$C_POBR
00000370 036C .LONG 0
00000370 036C .=PHD...+PHD$C_P1BR
7F802000 0370 .LONG ^X7F802000
00200000 0374 .LONG ^X200000 ; P1 LENGTH REGISTER
00000318 0378 .=PHD...+PHD$C_KSP
00000300 0318 .LONG SWPKSP ; KERNEL STACK POINTER
0000036F 031C .=PHD...+PHD$C_ASTLVL
04 036F .BYTE 4 ; NO PENDING AST'S
000002D0 0370 .=PHD...+PHD$C_FREP1VA
7FFFFFFE00 02D0 .LONG ^X7FFFFFFE00 ; ALL FREE
000002E2 02D4 .=PHD...+PHD$C_PHVINDE
FFFF 02E2 .WORD -1 ; MAKE PAGE FAULTS ILLEGAL
000003AC 02E4 .=PHD...+PHD$C_AUTHPRI
OF 03AC .BYTE 31-SWAP_EXT_PRIO ; BASE SWAP EXT PRIO
0000041C 03AD .=SAV... ; POSITION TO END OF PHD
041C 313
041C 314
041C 315
041C 316
041C 317
041C 318
00000540 0420 .ALIGN QUAD
00000420 0540 .BLKB PCB$C_LENGTH
00000420 0420 .=PCB...+PCB$C_SQFL
00000420 0424 .LONG -4
0120 0428 .WORD PCB$C_LENGTH
0C 042A .BYTE DYN$C_PCB
0000042D 042B .=PCB...+PCB$C_ASTEN
OF 042D .BYTE ^XOF
00000430 042E .=PCB...+PCB$C_ASTQFL
00000430 0430 .LONG -4
00000430 0434 .LONG SWPPHD-^X80000000+PHD$C_PCB ; PHYSICAL PCB ADDRESS
80000318 0438 .=PCB...+PCB$C_UIC
000004DC 043C .LONG SWAP_UIC,1 ; SWAP_UIC FOR PROCESS, RESO
00000001 00010004 04DC .=PCB...+PCB$C_STATE
0000044C 04E4 .WORD SCH$C_CUR
000E 044C .=PCB...+PCB$C_STS
00000444 044E .LONG <1@PCB$V_RES>+<1@PCB$V_PSWAPM>+<1@PCB$V_PHDRES>
00040011 0444

```

```
0000044F 0448      .PCB...+PCBSB_PRI0
                   OF 044F      .BYTE 31-SWAP_EXT_PRI0      ; BASE_SWAP_EXT_PRI0
0000044B 0450      .PCB...+PCBSB_AUTHPRI
                   OF 044B      .BYTE 31-SWAP_EXT_PRI0      ; INITIAL_BASE_SWAP_EXT_PRI0
0000042B 044C      .PCB...+PCBSB_PRI
                   OF 042B      .BYTE 31-SWAP_EXT_PRI0      ; CURRENT_SWAP_EXT_PRI0
00000449 042C      .PCB...+PCBSB_PRI0SAV
                   OF 0449      .BYTE 31-SWAP_EXT_PRI0      ; SAVED_BASE_SWAP_EXT_PRI0
00000448 044A      .PCB...+PCBSB_PRI0SAV
                   OF 0448      .BYTE 31-SWAP_EXT_PRI0      ; SAVED_CURRENT_SWAP_EXT_PRI0
00000460 0449      .PCB...+PCBSW_DIOLM
                   0006 0460      .WORD 6      ; ALLOW_REASONABLE_LIMIT
0000045E 0462      .PCB...+PCBSW_DIOCNT
                   0006 045E      .WORD 6
00000480 0460      .PCB...+PCBSL_PID
00010001 0480      .LONG SCH$C_SWPPID+<1@16>      ; PROCESS_ID
0000048C 0484      .PCB...+PCBSL_PHD
000002A0 048C      .LONG SWPPHD      ; PROCESS_HEADER
000004A4 0490      .PCB...+PCBSQ_PRIV
FFFFFFFF FFFFFFFF 04A4      .LONG -1,-1      ; ALL_PRIVILEGES
000004A4 04AC      .LONG ARB
000004D4 0480      .PCB...+PCBSQ_PRIV+ARBSR_RIGHTSDESC
000004DC 00000040 04D4      .LONG ARBS LOCALRIGHTS,LU
000004C4 04DC      .PCB...+PCBSQ_PRIV+ARBSR_RIGHTSLIST
000004D4 04C4      .LONG LR      ; LOCAL_RIGHTS_LIST
00000000 04C8      .LONG EXESQ_RIGHTSLIST      ; SYSTEM_RIGHTS_LIST
00000490 04CC      .PCB...+PCBST_LNAME
                   07 0490      .BYTE NCHAR
52 45 50 50 41 57 53 0491      .ASCII \SWAPPER\
00000524 0498      .PCB...+PCBSL_LOCKQFL
00000524 0524      .LONG .
00000524 0528      .LONG .-4
00000540 052C      .PCB...+PCBSL_LOCKQFL
00000540 0540      .PCB...+PCBSL_LOCKQFL
00000480 0540      .PCB...+PCBSL_LOCKQFL
319 .SAV...
320 SCH$GL_SWPPID==SCH$GL_SWPPCB+PCBSL_PID
; POSITION TO END OF PCB
; ADDRESS OF SWAPPER PID
```


	0540	322	.SBTTL SYSTEM PCB	
	0540	323		
	0540	324	GENERATE DUMMY PCB FOR SYSTEM PAGING	
	0540	325		
	0540	326		
	0540	327	GENPCB MMG\$AL SYSPCB,PHD=0,-	
	0540	328	PID=0,PRIORITY=SYS_EXT_Prio	
00000660	0540		.BLKB PCB\$C_LENGTH	
00000540	0660		.PCB...+PCB\$C_SQFL	
00000540	0540		.LONG	
00000540	0544		.LONG -4	
0120	054B		.WORD PCB\$C_LENGTH	
0C	054A		.BYTE DYN\$C-PCB	
0000054D	054B		.PCB...+PCB\$B_ASTEN	
0F	054D		.BYTE ^XOF	
00000550	054E		.PCB...+PCB\$B_ASTQFL	
00000550	0550		.LONG	
00000550	0554		.LONG -4	
80000078	0558		.LONG 0-^X80000000+PHD\$C_PCB ; PHYSICAL PCB ADDRESS	
000005FC	055C		.PCB...+PCB\$B_UIC	
00000001	05FC		.LONG 0,1 ; 0 FOR PROCESS, RESOURCE FLAG	
0000056C	0604		.PCB...+PCB\$W_STATE	
000E	056C		.WORD SCH\$C_CUR	
00000564	056E		.PCB...+PCB\$C_STS	
00040011	0564		.LONG <10PCB\$V_RES>+<10PCB\$V_PSWAPM>+<10PCB\$V_PHDRES>	
0000056F	0568		.PCB...+PCB\$B_PRI	
0F	056F		.BYTE 31-SYS_EXT_Prio ; BASE SYS_EXT_Prio	
0000056B	0570		.PCB...+PCB\$B_AUTHPRI	
0F	056B		.BYTE 31-SYS_EXT_Prio ; INITIAL BASE SYS_EXT_Prio	
0000054B	056C		.PCB...+PCB\$B_PRI	
0F	054B		.BYTE 31-SYS_EXT_Prio ; CURRENT SYS_EXT_Prio	
00000569	054C		.PCB...+PCB\$B_PRI\$SAV	
0F	0569		.BYTE 31-SYS_EXT_Prio ; SAVED BASE SYS_EXT_Prio	
0000056B	056A		.PCB...+PCB\$B_PRI\$SAV	
0F	056B		.BYTE 31-SYS_EXT_Prio ; SAVED CURRENT SYS_EXT_Prio	
00000580	0569		.PCB...+PCB\$W_DIOCM	
0006	0580		.WORD 6 ; ALLOW REASONABLE LIMIT	
0000057E	0582		.PCB...+PCB\$W_DIOCNT	
0006	057E		.WORD 6	
000005A0	0580		.PCB...+PCB\$C_PID	
00010000	05A0		.LONG 0+<1016> ; PROCESS ID	
000005AC	05A4		.PCB...+PCB\$C_PHD	
00000000	05AC		.LONG 0 ; PROCESS HEADER	
000005C4	05B0		.PCB...+PCB\$Q_PRIV	
FFFFFFFF	05C4		.LONG -1,-1 ; ALL PRIVILEGES	
000005C4	05CC		.LONG ARB	
000005F4	05D0		.PCB...+PCB\$Q_PRIV+ARB\$R_RIGHTSDESC	
000005FC	05F4		.LONG ARB\$C_LOCALRIGHTS,LU	
000005E4	05FC		.PCB...+PCB\$Q_PRIV+ARB\$R_RIGHTSLIST	
000005F4	05E4		.LONG LR ; LOCAL RIGHTS LIST	
00000000	05E8		.LONG EXE\$GQ_RIGHTSLIST ; SYSTEM RIGHTS LIST	
000005B0	05EC		.PCB...+PCB\$T_LNAME	
00	05B0		.BYTE NCHAR	
00000644	05B1		.PCB...+PCB\$C_LOCKQFL	
00000644	0644		.LONG	
00000644	0648		.LONG -4	
00000660	064C		.PCB...+PCB\$C_LOCKQFL	
		.=SAV...		
				; POSITION TO END OF PCB

PDAT
V04-000

PROCESS DATA BASE
SYSTEM PCB

0660 329

B 3

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```
0660 331 .SBTTL PCB ADDRESS VECTOR
0660 332 :
0660 333 :
0660 334 NOTE: THE POINTER TO THE NULL PROCESS PCB MUST BE PROCESS
0660 335 INDEX=0. ALL INACTIVE PCB POINTER ENTRIES ARE FILLED
0660 336 WITH THE ADDRESS OF THE NULL PROCESS PCB TO INSURE THAT
0660 337 THEY POINT TO A VALID PCB.
0660 338 NOTE: MANY PLACES IN VMS ASSUME THAT THE SWAPPER IS IN THE
0660 339 HIGHEST NUMBERED "SPECIAL" SLOT. MANY SCANS OF THE
0660 340 PCBVEC GO FROM SCH$C_SWPPIX+1 TO THE END.
00000000 0660 341 NULPIX=0 ; PIX FOR NULL PROCESS
00000001 0660 342 SCH$C_SWPPIX==1 ; PIX FOR SWAPPER PROCESS
0660 343 :
0660 344 :
0660 345 VECTOR OF PROCESS CONTROL BLOCK ADDRESSES
0660 346 :
0660 347 .ALIGN LONG ; LONG WORD ALIGNMENT
0660 348 SCH$GL_PCBVEC:: ; POINTER TO PCB VECTOR
00000000 0660 349 .LONG 0 ;
0664 350 :
0664 351 :
0664 352 VECTOR OF SEQUENCE NUMBERS FOR PID GENERATION
0664 353 :
0664 354 SCH$GL_SEQVEC:: ; POINTER TO SEQUENCE NUMBER VECTOR
00000000 0664 355 .LONG 0 ;
0668 356 :
0668 357 :
0668 358 DATA ITEMS FOR PCBVEC REFERENCES
0668 359 :
0668 360 SCH$GL_MAXPIX:: ; MAXIMUM PROCESS INDEX
00000000 0668 361 .LONG 0 ;
066C 362 SCH$GL_PIXLAST:: ; LAST PROCESS INDEX CREATED, USED
00000001 066C 363 .LONG SCH$C_SWPPIX ; IN ROUND ROBIN PID ALLOCATION.
0670 364 ; INIT TO SCH$C_SWPPIX SO FIRST SEA
0670 365 ; WILL GET SLOT AFTER SWAPPER
0670 366 :+
0670 367 *** The next cell contains the width of the index field in the extended (user-
0670 368 *** visible) PID. While it is possible to find the pcb address with:
0670 369 ***
0670 370 *** EXTZV #0, G^SCH$GL_PIXWIDTH, EPID, R0 ; Get index in R0
0670 371 *** MOVL @G^SCH$GL_PCBVEC[R0], R0 ; R0 now has PCB addr
0670 372 ***
0670 373 *** it is much safer to do
0670 374 ***
0670 375 *** MOVL EPID, R0 ; Extended PID to R0
0670 376 *** JSB EXE$EPID_TO_PCB ; Returns PCB addr in R0
0670 377 ***
0670 378 *** The format of the PID is likely to change again in future releases. Calling
0670 379 *** the routine offers a program much greater insurance against problems from
0670 380 *** future PID changes.
0670 381 :
00000000 0670 382 SCH$GL_PIXWIDTH:: ; WIDTH OF PROCESS INDEX FIELD IN
0670 383 .LONG 0 ; THE PID, DETERMINED BY SYSGEN
0674 384 ; MAXPROCESSCNT PARAMETER
0674 385 :
0000 0674 386 SCH$GW_LOCALNODE:: ; ID FOR LOCAL CLUSTER NODE, USED
0674 387 .WORD 0 ; FOR THE NODE FIELD IN THE EPID
```


PDAT
V04-000

PROCESS DATA BASE
PCB ADDRESS VECTOR

D 3

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0000 0676 388
0676 389
0678 390

.WORD 0

; SPARE FOR ALIGNMENT

PDAT
V04-000

PROCESS DATA BASE
PCB ADDRESS VECTOR

0678 392

.END

E 3

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PDAT
Symbol table

PROCESS DATA BASE

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ARB	= 000005C4	R	03
ARBSR_RIGHTSDESC	= 00000030		
ARBSR_RIGHTSLIST	= 00000020		
ARBSR_LOCALRIGHTS	= 00000040		
DYN\$C_PCB	= 0000000C		
EXESG\$ RIGHTSLIST	*****	X	03
EXESNULLPROC	*****	X	03
EXESSWAPINIT	*****	X	03
LR	= 000005F4	R	03
LU	= 000005FC	R	03
MMGSAL_SYSPCB	= 00000540	RG	03
NCHAR	= 00000000		
NULKSP	= 00000080	R	02
NULL_EXT_PRIO	= 00000000		
NULPRD	= 00000000	R	03
NULPIX	= 00000000		
PCBSB_ASTEN	= 0000000D		
PCBSB_AUTHPRI	= 0000002B		
PCBSB_PRI	= 0000000B		
PCBSB_PRIB	= 0000002F		
PCBSB_PRIBSAV	= 00000029		
PCBSB_PRISAV	= 00000028		
PCBSB_TYPE	= 0000000A		
PCBSL_LENGTH	= 00000120		
PCBSL_ARB	= 0000008C		
PCBSL_ASTQFL	= 00000010		
PCBSL_LOCKQFL	= 00000104		
PCBSL_PHD	= 0000006C		
PCBSL_PHYPCB	= 00000018		
PCBSL_PID	= 00000060		
PCBSL_SQFL	= 00000000		
PCBSL_STS	= 00000024		
PCBSL_UIC	= 000000BC		
PCBSQ_PRIV	= 00000084		
PCBST_LNAME	= 00000070		
PCBSV_PHDRES	= 00000012		
PCBSV_PSWAPM	= 00000004		
PCBSV_RES	= 00000000		
PCBSW_DIOCNT	= 0000003E		
PCBSW_DIOLM	= 00000040		
PCBSW_SIZE	= 00000008		
PCBSW_STATE	= 0000002C		
PCB...	= 00000540	R	03
PHDSB_ASTLVL	= 000000CF		
PHDSB_AUTHPRI	= 0000010C		
PHDSC_LENGTH	= 0000017C		
PHDSL_FREPIVA	= 00000030		
PHDSL_KSP	= 00000078		
PHDSL_POBR	= 000000C8		
PHDSL_POLRASTL	= 000000CC		
PHDSL_P1BR	= 000000D0		
PHDSL_P1LR	= 000000D4		
PHDSL_PC	= 000000C0		
PHDSL_PCB	= 00000078		
PHDSL_R4	= 00000098		
PHDSQ_PRIVMSK	= 00000000		
PHDSW_PHVINDE	= 00000042		

PHD...	= 000002A0	R	03
SAV...	= 00000660	R	03
SCH\$C_CUR	= 0000000E		
SCH\$C_MAXPIX	= 0000003F	G	
SCH\$C_SWPPIX	= 00000001	G	
SCH\$GL_MAXPIX	= 00000668	RG	03
SCH\$GL_NULLPCB	= 00000180	RG	03
SCH\$GL_PCBVEC	= 00000660	RG	03
SCH\$GL_FIXLAST	= 0000066C	RG	03
SCH\$GL_PIXWIDTH	= 00000670	RG	03
SCH\$GL_SEQVEC	= 00000664	RG	03
SCH\$GL_SWPPCB	= 00000420	RG	03
SCH\$GL_SWPPID	= 00000480	RG	03
SCH\$GW_LOCALNODE	= 00000674	RG	03
SGN\$C_BALSETCNT	= 00000018	G	
SGN\$C_DFWSCNT	= 00000064	G	
SGN\$C_DFWSQUOTA	= 00000078	G	
SGN\$C_GBLSECCNT	= 00000028	G	
SGN\$C_MAXGPCNT	= 00000800	G	
SGN\$C_MAXPAGCNT	= 00004000	G	
SGN\$C_MAXPGFL	= 00001000	G	
SGN\$C_MAXPSTCNT	= 00000005	G	
SGN\$C_MAXVPGCNT	= 00002000	G	
SGN\$C_MAXWSCNT	= 00000400	G	
SGN\$C_MINWSCNT	= 0000000A	G	
SGN\$C_NPAGEDYN	= 00006800	G	
SGN\$C_NPROCS	= 00000040	G	
SGN\$C_PAGEDYN	= 00004000	G	
SGN\$C_PHYPAGCNT	= 00001000	G	
SGN\$C_SYSDWSCNT	= 00000028	G	
SGN\$C_SYSVECPGS	= 00000005	G	
SGN\$C_SYSWSCNT	= 00000060	G	
SWAP_EXT_PRIO	= 00000010		
SWAP_UIC	= 00010004		
SWPSA_KSTK	= 00000300	RG	02
SWPSK_KSTKSZ	= 000000A0	G	
SWPKSP	= 00000300	R	02
SWPPHD	= 000002A0	R	03
SYS_EXT_PRIO	= 00000010		

PH
VO

+-----+
! Psect synopsis !
+-----+

PSECT name	Allocation	PSECT No.	Attributes
ABS	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$ABS\$	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
\$\$\$000_STACKS	00000300 (768.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC QUAD
\$\$\$230	00000678 (1656.)	03 (3.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC QUAD

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	38	00:00:00.04	00:00:01.93
Command processing	113	00:00:00.52	00:00:03.75
Pass 1	239	00:00:05.87	00:00:20.33
Symbol table sort	0	00:00:00.62	00:00:02.48
Pass 2	118	00:00:01.52	00:00:05.15
Symbol table output	12	00:00:00.09	00:00:00.51
Psect synopsis output	2	00:00:00.03	00:00:00.03
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	524	00:00:08.69	00:00:34.18

The working set limit was 1350 pages.
41207 bytes (81 pages) of virtual memory were used to buffer the intermediate code.
There were 30 pages of symbol table space allocated to hold 479 non-local and 0 local symbols.
392 source lines were read in Pass 1, producing 18 object records in Pass 2.
22 pages of virtual memory were used to define 16 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name	Macros defined
_\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	6
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	3
TOTALS (all libraries)	9

524 GETS were required to define 9 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:PDAT/OBJ=OBJ\$:PDAT MSRC\$:PDAT/UPDATE=(ENH\$:PDAT)+EXECML\$/LIB

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